Hurricane Cyclones Case Study: Steelmaking

White slag powder recovery

FOREWORD

In 2010, Advanced Cyclone Systems was approached by a Spanish important steelmaking industry to recover white slag powder resulting from the molten steel and additives in the reinforcement bar production. The cyclone separation occurs after pneumatic transportation.

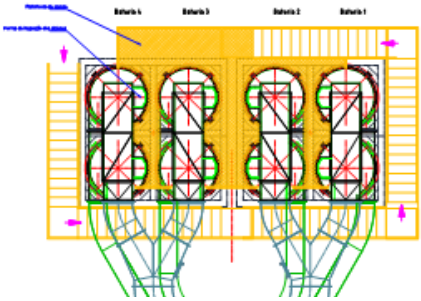
CASE DESCRIPTION AND OBJECTIVES

The objective of the company was to recover this powder on a dry basis and, at the same time, to save the bag filter, placed downstream from wear, considering the extreme abrasiveness of the particles. ACS proposed and installed a wear resistant *Hurricane* system.

The Median Volume Diameter (MVD) of the particles is close to 15 µm and efficiency was expected to be around 97 %.

OPERATING CONDITIONS

- Type of Powder — White slag
- Median Particle Size (µm) — ≈ 15
- True/Bulk Density (kg/m^3) — 3,270 / 1,730
- Actual flowrate (m^3/h) — 158,500
- Temperature (ºC) — 165
- Average load (g/m^3) — 375



PERFORMANCE

- Expected collection (%) — > 97
- Pressure drop (mm w. g.) — 230

GENERAL ARRANGEMENT

The equipment is composed by 8 *Hurricanes* with ∅ 1750 mm installed in two batteries (see figure).

Each *Hurricane* was inner lined with 30 mm thick Densit® wear protection lining.

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